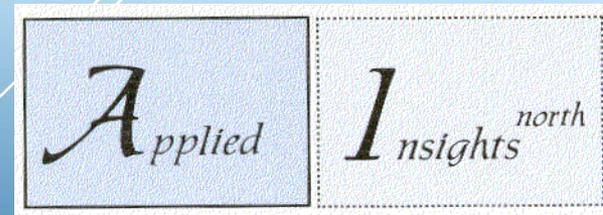


**Badger Schools (ISD 676)
Student Enrollment Projection
to 2031/32**

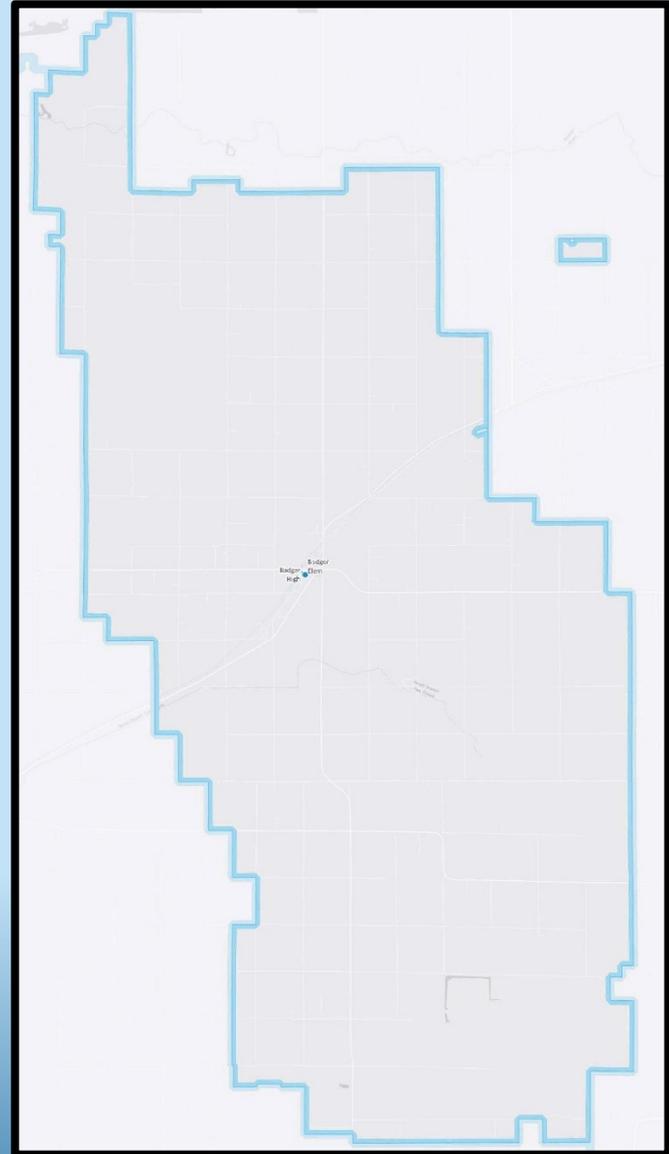


The Overview

- Roseau County has a strong economy founded on long-established, locally-grown manufacturing and agriculture.
- Like most rural counties, it has lost population and is expected to continue to do so. Its population is generally older than the state average.
- While employment opportunities are solid the supply of affordable housing is the key issue holding back growth. Most new housing within the county is being built in Roseau and Warroad. New housing starts in Badger have been limited and even though there is room for additional units the pace of development is slow and is not at a level that would appreciably impact local population and student enrollment levels.
- Until substantial housing development occurs the primary driver for increasing number of households with children in the district will be gradual replacement of older households.
- Enrollment decline at the district has been driven by a drop in the number of students living within the district. This decline appears to be flattening out somewhat.
- The district benefits from gains through open enrollment. Even though the number of students living in the two adjacent districts is declining Badger should expect to maintain its inflow of non-resident students.
- **K-12 enrollment is expected to decline 12.8% (218 to 190) by 2031/32.**

Factors Considered in Projection

- Pattern of student enrollment change within the district.
- Trends in adjacent districts including open enrollment exchanges.
- Development initiatives within district.
- Patterns of births relative to district kindergarten enrollment including projected births.

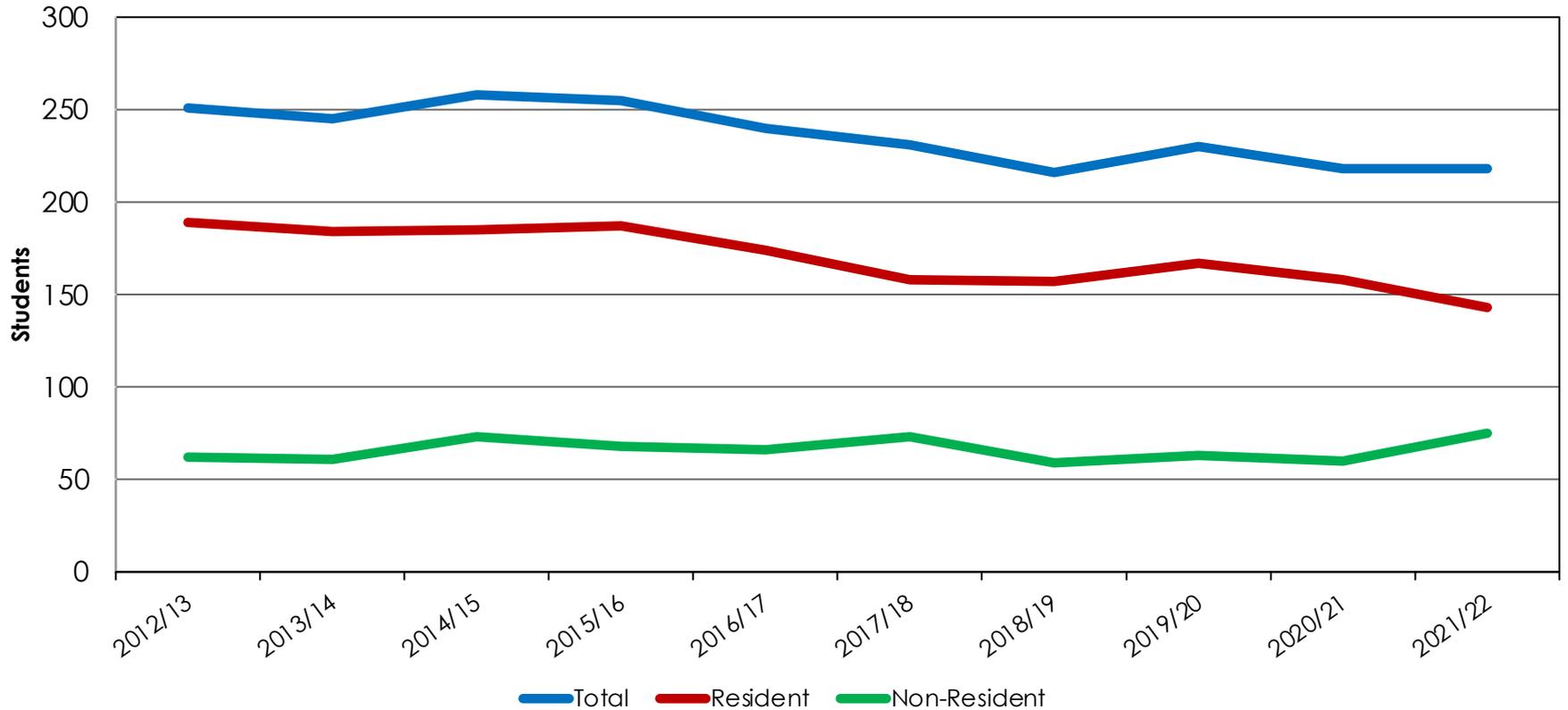


Badger Enrollment, 2012/13 – 2021/22

Grade	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
K	19	12	17	17	14	14	14	16	13	14
1	16	21	15	17	14	15	11	16	17	17
2	21	15	18	17	16	12	16	13	16	18
3	20	19	18	21	18	16	13	15	11	18
4	23	21	19	20	21	18	16	14	14	12
5	14	22	19	21	20	21	16	19	12	12
6	18	15	24	20	20	19	19	16	18	15
7	19	16	17	26	23	20	19	21	17	16
8	17	19	20	15	24	22	18	21	22	21
9	31	15	22	21	15	24	21	20	17	20
10	24	31	15	18	23	14	24	21	16	20
11	16	24	28	14	18	19	13	25	20	15
12	13	15	26	28	14	17	16	13	25	20
Total K-12	251	245	258	255	240	231	216	230	218	218
K – 6	131	125	130	133	123	115	105	109	101	106
7 – 12	120	120	128	122	117	116	111	121	117	112

Source: MDE, district.

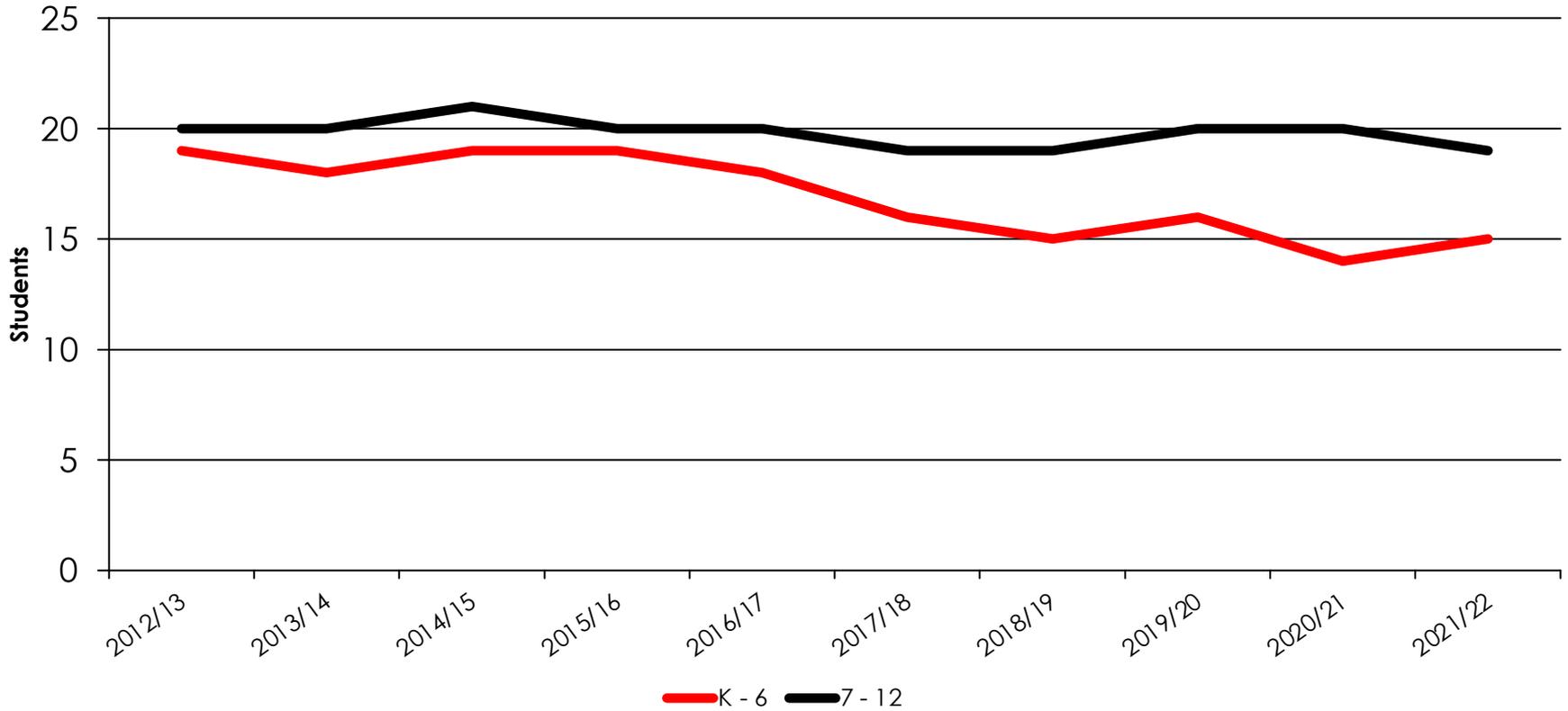
Badger K-12 Enrollment, 2012/13—2021/22



	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Resident	189	184	185	187	174	158	157	167	158	143
Non-Res.	62	61	73	68	66	73	59	63	60	75
Total	251	245	258	255	240	231	216	230	218	218

Source: MDE, district.

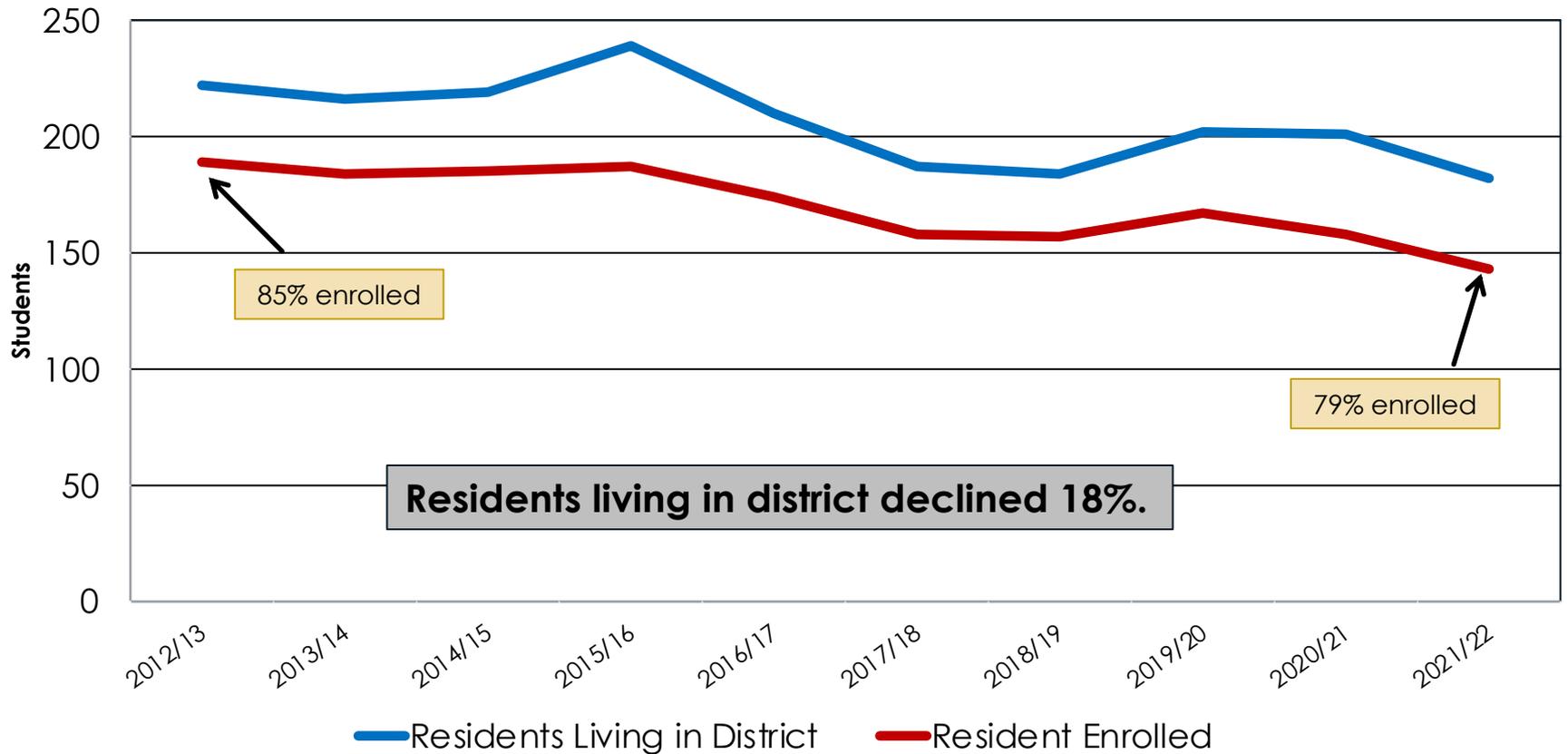
Badger K-12 Average Grade Size by Grade Group, 2012/13—2021/22



Avg. Size	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
K - 6	19	18	19	19	18	16	15	16	14	15
7 - 12	20	20	21	20	20	19	19	20	20	19

Source: MDE, district, Applied Insights North.

Badger K-12 Resident Students Enrolled Compared to Resident Students Living in District, 2012/13—2021/22



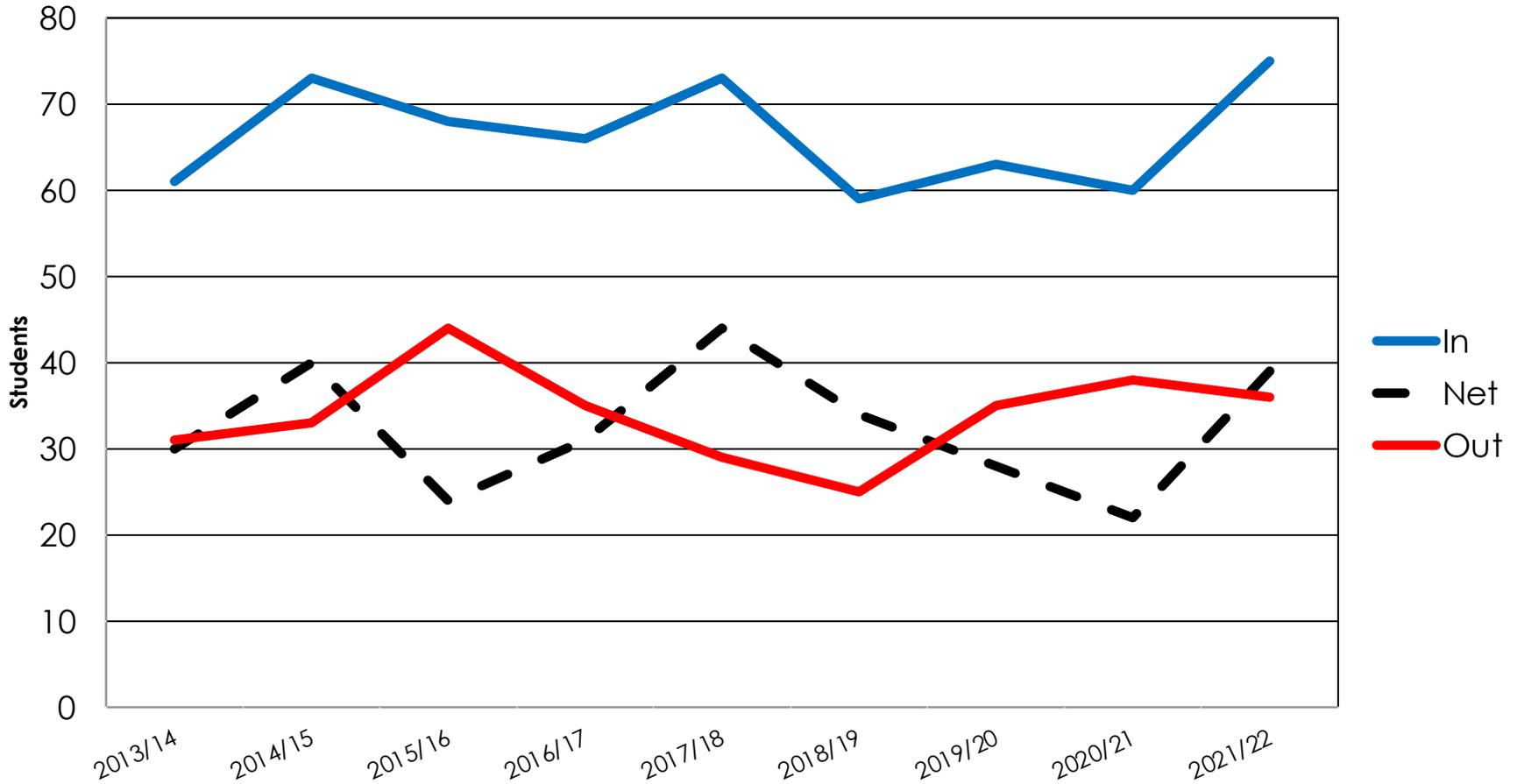
Residents	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
In District	222	216	219	239	210	187	184	202	201	182
Enrolled	189	184	185	187	174	158	157	167	158	143

K-12 Resident Student Analysis

In District										
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Total	222	216	219	239	210	187	184	202	201	182
Enrolled	189	184	185	187	174	158	157	167	158	143
Open Enroll Out	32	31	33	44	35	29	25	35	38	36
Private Home- Schooled	1	1	1	8	1	0	2	0	5	3
Percent of Total										
Enrolled	85.1%	85.2%	84.5%	78.2%	82.9%	84.5%	85.3%	82.7%	78.6%	78.6%
Open Enroll Out	14.4%	14.4%	15.1%	18.4%	16.7%	15.5%	13.6%	17.3%	18.9%	19.8%
Private Home- Schooled	0.5%	0.5%	0.5%	3.3%	0.5%	0.0%	1.1%	0.0%	2.5%	1.6%

Open Enrollment

Badger Open Enrollment Net Exchange, 2013/14—2021/22



Source: MDE, district.

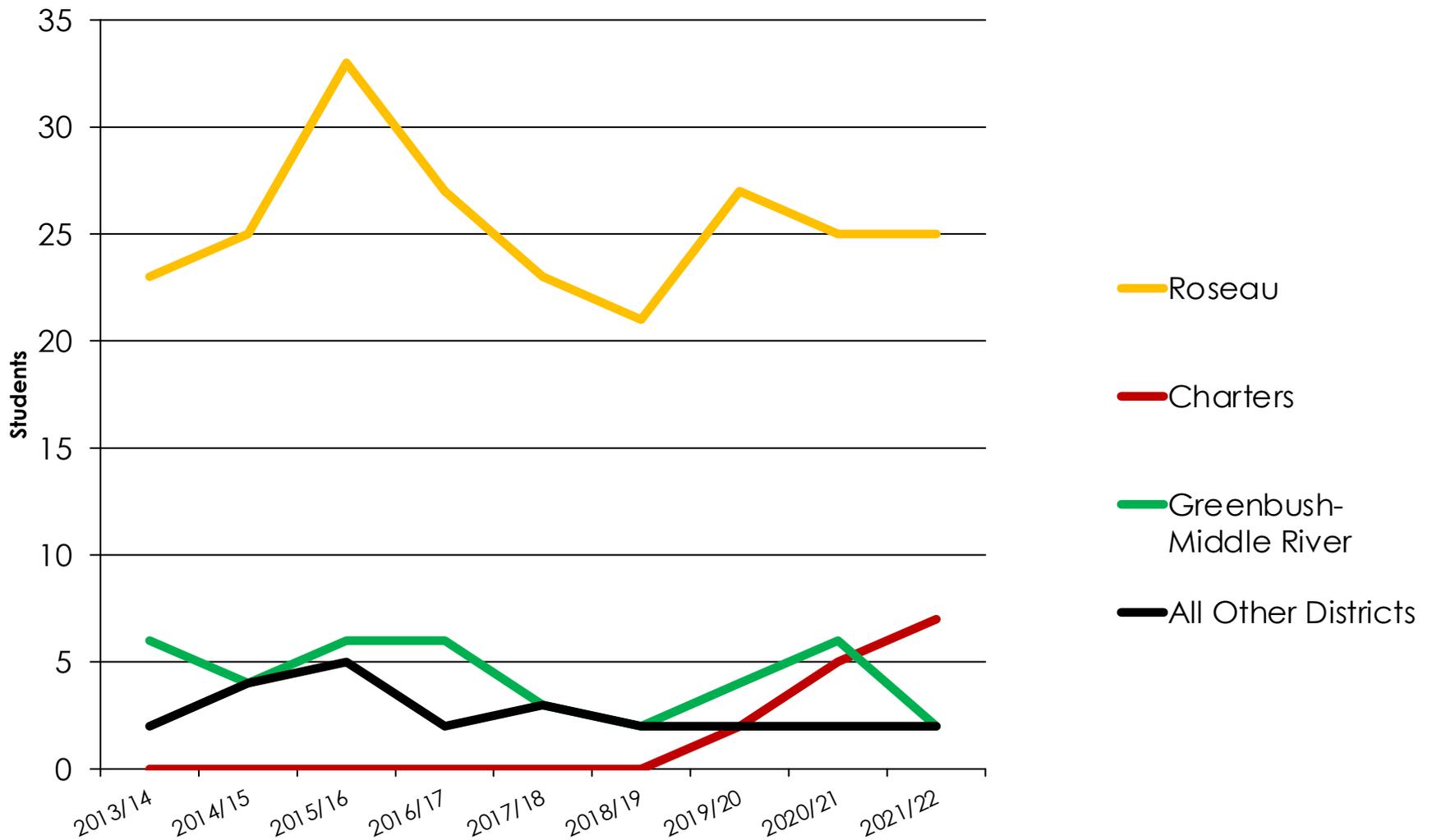
K-12 Open Enrollment: Average Exchanges by Year Group, 2013/14—2021/22

	First 3-Year Average			Middle 3-Year Average			Last 3-Year Average		
	In	Out	Net	In	Out	Net	In	Out	Net
Roseau	27	27	0	34	24	10	36	26	10
Greenbush-Middle River	40	5	35	31	4	27	28	4	24
All Other Districts	0	4	-4	1	2	-1	2	2	0
Charters	0	0	0	0	0	0	0	5	-5
Total	67	36	31	66	30	36	66	36	30

Open Enrollment Summary

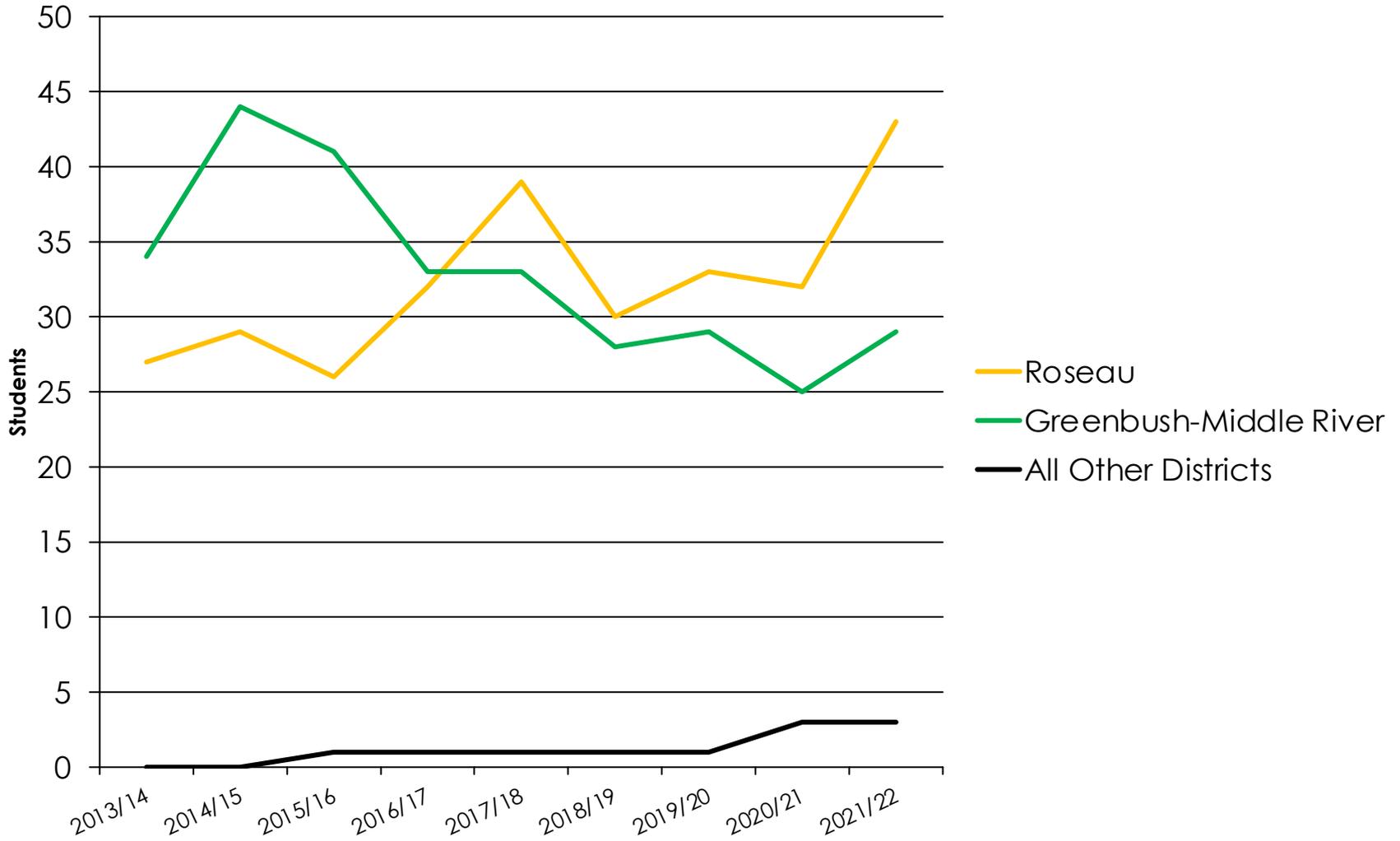
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
In	61	73	68	66	73	59	63	60	75
Out	31	33	44	35	29	25	35	38	36
Net	30	40	24	31	44	34	28	22	39

Open Enrollment **Out** by Destination District, 2013/14—2021/22



Source: MDE, district.

Open Enrollment In by Source District, 2013/14—2021/22



Source: MDE, district.

Grade Progression Ratios

Resident Students

Average Grade Progression Ratios for 2013/14 to 2021/22 by Three-Year Groups

Grade Shift	All Years	First 3	Mid 3	Last 3	Projection
K > 1	0.99	0.88	0.89	1.12	1.12
1 > 2	1.01	1.04	0.98	1.06	1.00
2 > 3	1.01	1.09	1.06	0.93	1.00
3 > 4	1.03	1.13	0.98	1.03	1.03
4 > 5	0.95	0.98	0.95	0.92	0.95
5 > 6	0.98	1.06	0.90	0.97	0.97
6 > 7	1.01	1.00	1.07	0.99	0.99
7 > 8	0.97	0.92	0.95	1.00	1.00
8 > 9	0.93	1.00	0.87	0.96	0.96
9 > 10	0.99	1.00	1.04	0.95	0.95
10 > 11	0.95	0.98	0.94	0.94	0.94
11 > 12	0.95	1.03	0.91	0.94	0.94

These ratios indicate the number of students who move from one grade level to the next. A number less than 1.0 means fewer students moved from one grade level to the next and a number greater than 1.0 means additional students joined the class from one year to the next.

The projection uses the average ratios of the last three years except for three shifts whose averages were impacted by an anomalous year: grade 1>2 adjusted down; grade 2>3 adjusted up; grade 4>5 adjusted up.

Grade Progression Ratios

Non-Resident Students

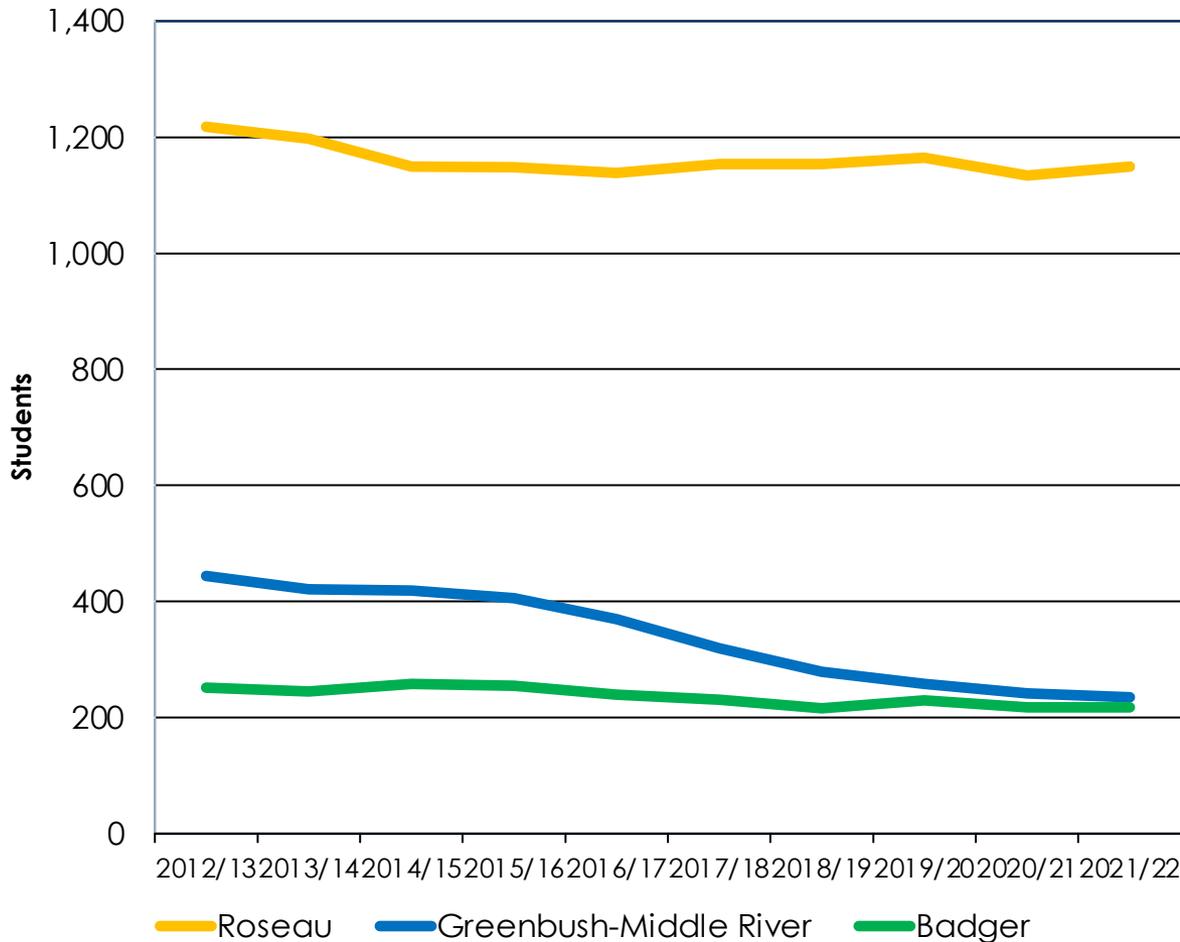
Average Grade Progression Ratios for 2013/14 to 2021/22 by Three-Year Groups

Grade Shift	All Years	First 3	Mid 3	Last 3	Projection
K > 1	1.66	2.25	0.94	1.78	1.00
1 > 2	1.02	0.89	0.95	1.23	1.00
2 > 3	1.11	1.27	1.00	1.06	1.06
3 > 4	1.11	1.11	1.17	1.07	1.07
4 > 5	1.02	1.08	0.98	1.00	1.00
5 > 6	1.22	1.08	1.07	1.50	1.00
6 > 7	1.16	1.24	1.06	1.18	1.18
7 > 8	1.42	1.77	0.86	1.63	1.00
8 > 9	1.16	1.19	1.42	0.88	0.88
9 > 10	1.07	0.91	0.98	1.32	1.00
10 > 11	0.95	0.92	0.87	1.07	1.07
11 > 12	1.08	1.04	0.98	1.21	1.00

These ratios indicate the number of students who move from one grade level to the next. A number less than 1.0 means fewer students moved from one grade level to the next and a number greater than 1.0 means additional students joined the class from one year to the next.

Due to the limited number of students in any one grade, seven ratios used in the projection are set to 1.00 which has a neutral impact on progression. The others use the average of the past three years as they reflect historical trends and, in all but one case, provide for slight increase of students.

K-12 Enrollment for Badger, Roseau, Greenbush-Middle River Districts, 2012/13—2021/22



Context: Area Schools

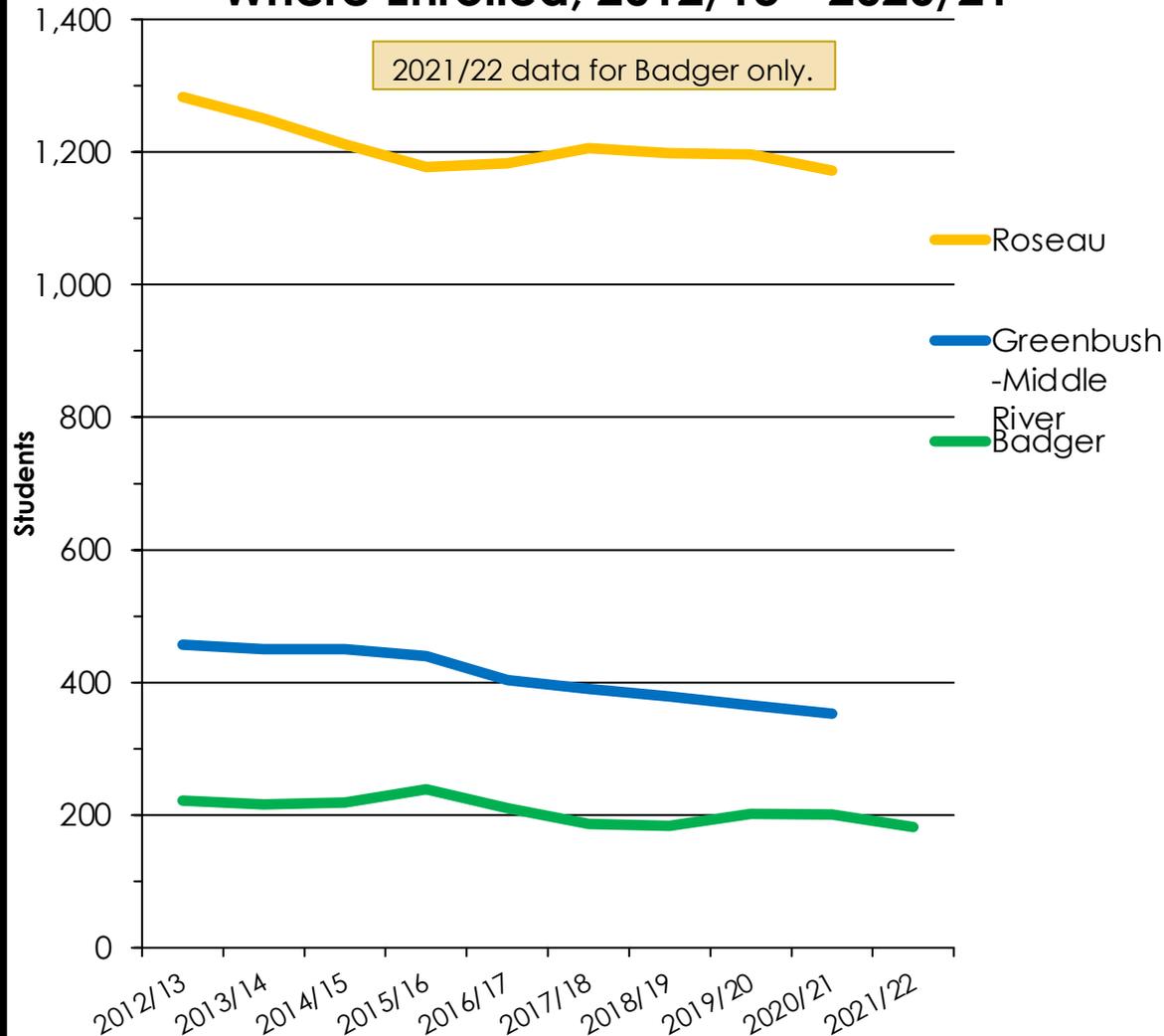
All three districts declined over the time period.

Greenbush-Middle River dropped 47.1% (444 to 235) due to fewer students living in district and open enrollment losses (boosted by issues related to a school closure).

Roseau declined 5.7% (1,218 to 1,149) but has been stable since 2014/15.

Badger decreased 13.1% (251 to 218).

Resident K-12 Students Regardless of Where Enrolled, 2012/13—2020/21



Source: MDE, district.

Resident Student Base

This chart shows the number of resident students living within each district regardless of where they actually were enrolled. This removes the distortion caused by open enrollment and shows each district's "pool" of students

Every district lost students over the time period.

Greenbush-Middle River declined 22.8% (104 students from 457 to 353).

Roseau declined 8.7% (111 students from 1,283 to 1,172).

Badger dropped 9.5% through 2020/21 but by 18.0% measured through 2021/22 (21 students from 222 to 201).

Future: Estimating Births and Kindergarteners

Analyze 2000-2020 trends:
Changes in age groups
Births per year

Add in estimates & projections

Key factor is women age 15-44

Evaluate optional
fertility rates

Sources: US Census
State projections
State Department of Health.

Population Review

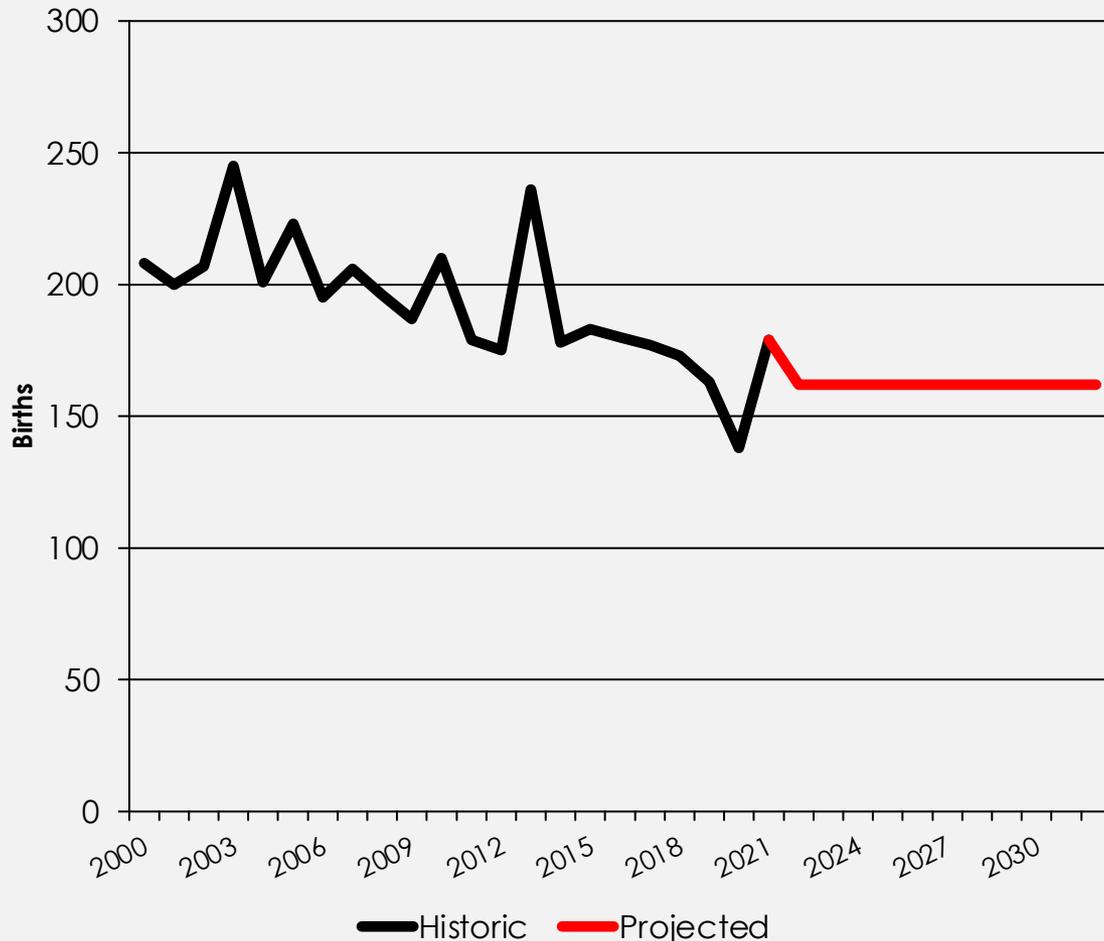
- US Census shows Roseau County population declined by 4.3% from 2000 to 2010 (16,338 to 15,629) and then by 1.9% from 2010 to 2020 (15,331).
- The 2020 Census count suggests the county may be declining at a slightly faster pace than that projected earlier by the State Demographic Center.
- Between 2000 and 2020 the Census-estimated population within the Badger school district declined by 11%: 1,273 in 2000 to 1,103 in 2010 to 1,099 in 2020.

Area Development Review

- Roseau County has a strong economy founded on long-established, locally-grown manufacturing and agriculture. Manufacturers are making significant investments; issue for them is attracting and holding workers and the major factor in that is the lack of sufficient affordable housing. Agricultural sector is strong but ongoing farm consolidations have decreased number of farms and people living in rural areas.
- Major residential development has been occurring in Roseau and Warroad where various city and other incentives have played major role. No housing development of any consequence will occur outside of a city.
- Badger is a solid bedroom community with nice amenities including the school and an array of businesses and services. Most people commute elsewhere to work.
- City-owned land in Badger is available for residential development and several new homes have been or are being built. There is room for additional development within the city. No major developments are known to be in the works.

Estimating Future Births & Kindergartners

Births to Roseau County Residents, 2000—2032



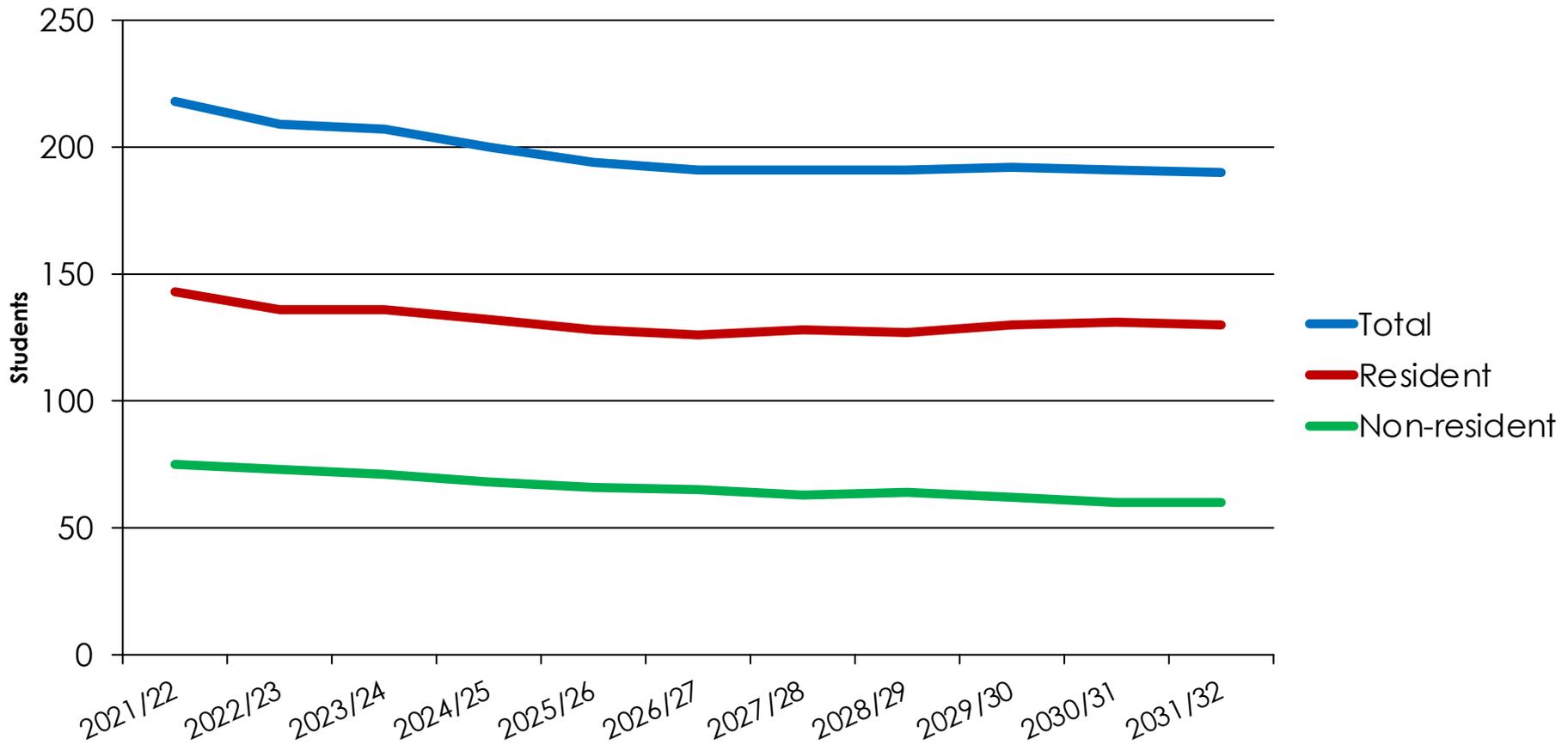
A key step in estimating future kindergarten classes is understanding trends in births to residents.

Alternative birth projections were generated based on average birth rates over different time periods. The enrollment projection uses the one covering 2010-21 which is in the middle of the various projection ranges.

Badger K-12 Enrollment Projection to 2031/32

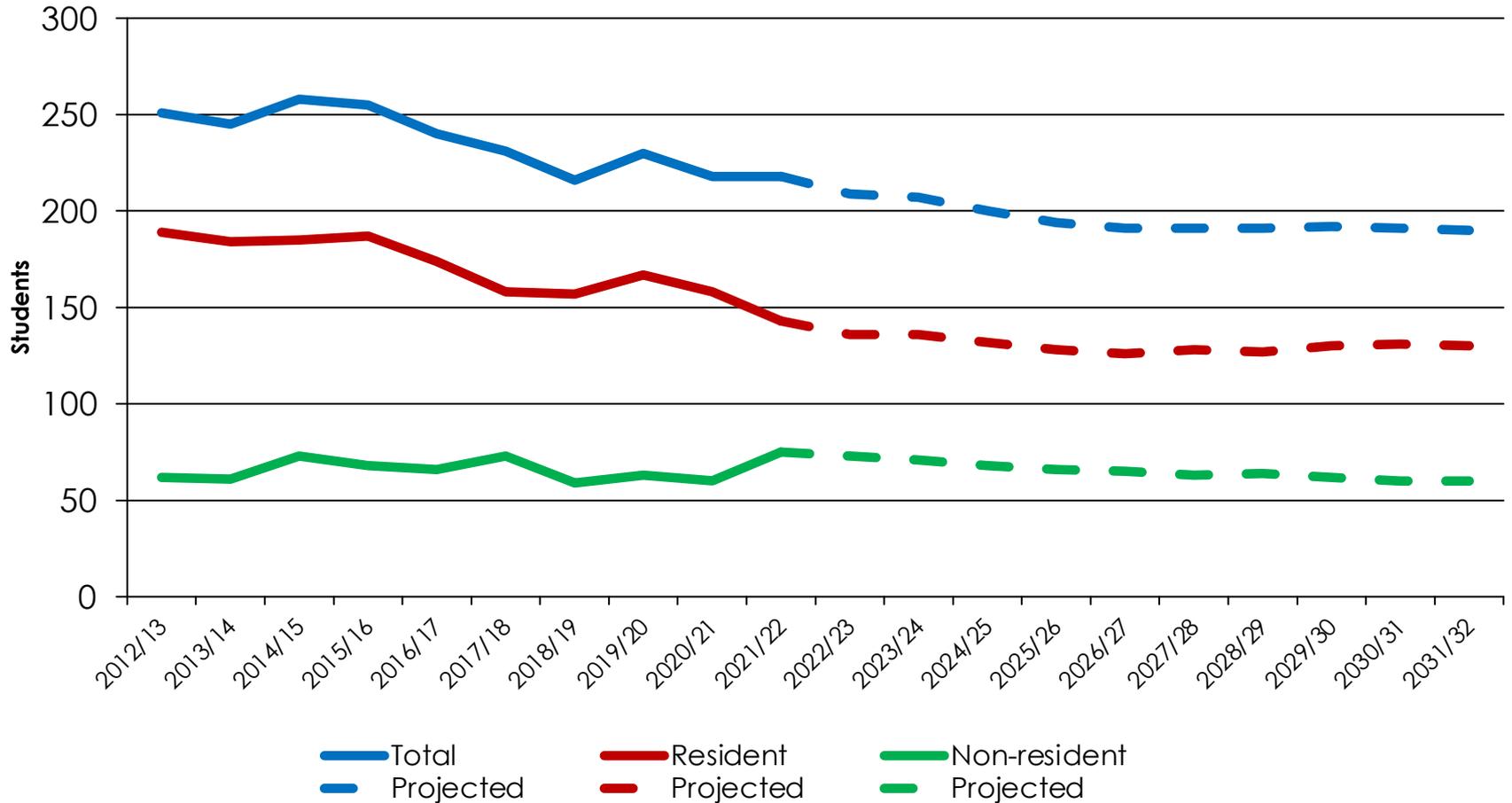
Grade	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
K	14	14	14	13	13	13	14	13	14	13	14
1	17	15	15	15	14	14	14	15	14	15	14
2	18	17	15	15	15	14	14	14	15	14	15
3	18	18	17	15	15	15	14	14	14	15	14
4	12	18	19	17	16	15	15	14	14	14	15
5	12	12	17	18	16	16	14	14	14	14	14
6	15	12	12	17	18	16	16	14	14	14	14
7	16	16	13	13	18	19	17	18	15	15	15
8	21	16	16	13	13	18	19	17	18	15	15
9	20	19	15	15	12	12	17	18	16	17	14
10	20	19	18	15	14	12	12	16	17	15	17
11	15	19	18	17	14	13	12	12	15	16	14
12	20	14	18	17	16	14	13	12	12	14	15
Total	218	209	207	200	194	191	191	191	192	191	190
K – 6	106	106	109	110	107	103	101	98	99	99	100
7 – 12	112	103	98	90	87	88	90	93	93	92	90

Badger K-12 Enrollment Projection to 2031/32

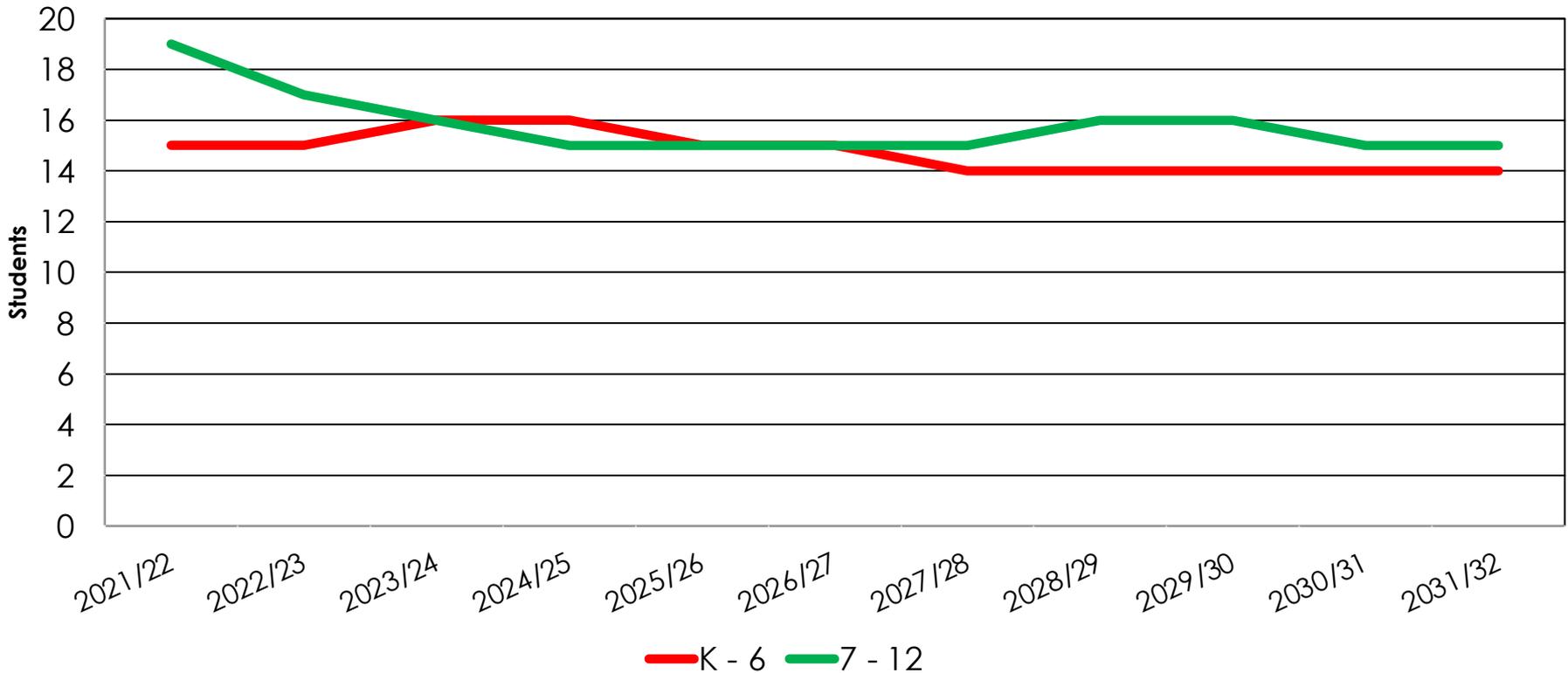


	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
Resident	143	136	136	132	128	126	128	127	130	131	130
Non-Res.	75	73	71	68	66	65	63	64	62	60	60
Total	218	209	207	200	194	191	191	191	192	191	190

Historical Perspective: Badger K-12 Enrollment, 2012/13—2031/32



Badger K-12 Enrollment Projection: Average Grade Size by Grade Group, 2021/22—2031/32

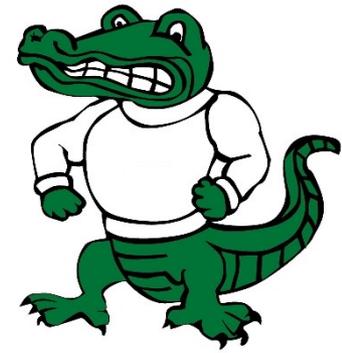


	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
K - 6	15	15	16	16	15	15	14	14	14	14	14
7 - 12	19	17	16	15	15	15	15	16	16	15	15

Using the Projection

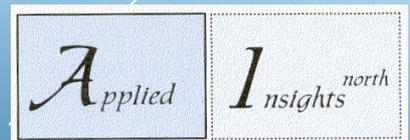
- This is a projection not a prediction. It is built on assumptions regarding the best understanding of district dynamics such as open enrollment and future births.
- The projection produces relatively smooth trend lines because it uses averages and constants. The reality is there will be annual fluctuations especially in such things as incoming kindergarten classes.
- Do not be concerned when actual numbers vary in a given year from the projection. Each year:
 - Check to see if the **TREND** and the **MAGNITUDE** of the projection align with the unfolding actual numbers. Evaluate deviations to determine the likely reason.
 - Monitor annual births (state health department data) to see if there are significant deviations from what is assumed in the projection.

Badger Schools (ISD 676) Student Enrollment Projection to 2031/32



Highlights

- The short summary is that the district's enrollment will decline but remain a solid single-section school.
- K-12 enrollment is expected to decline 12.8% from 218 to 190.
- K-6 enrollment will decline 5.7% from 106 to 100. Grade 7-12 enrollment will drop 19.6% from 112 to 90.
- Average K-6 grade size will start at 15, rise to 16 before falling to 14. Average grade 7-12 grade size will decline from 19 to 15.
- Resident student enrollment will decline 9.1% from 143 to 130 while non-resident student enrollment drops 20.0% from 75 to 60. The portion of total enrollment that is non-resident will be relatively stable going from 34.4% to 31.6%.
- It is important to bear in mind that with such small numbers of students in any given grade unexpected increases or decreases of even a couple of students will show up as substantial percentage changes.



Questions & Answers

This projection was prepared for ICS, Inc. by
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johnwpowers181@gmail.com

June 9, 2022

Previous enrollment projections and education projects by Applied Insights^{north}:

Enrollment projections:

Minnesota: Greenway, Nashwauk-Keewatin, Mora, Grand Rapids/Bigfork, Thief River Falls, Becker, St. Louis County, Mountain Lake, Hermantown, Fosston, Northland (Remer), Nevis, Wheaton, Melrose, Red Lake Falls, Sebeka, Aitkin, Mahnommen, Eveleth-Gilbert, Menahga, Hill City, Hinckley-Finlayson, Staples-Motley, Carlton, Fertile-Beltrami, Wadena-Deer Creek, Red Rock Central, Osakis, Dawson-Boyd, Montevideo, Roseau, Virginia, Waubun-Ogema-White Earth, Brandon-Evansville, Breckenridge, Ely, New York Mills, Belgrade-Brooten-Elrosa, Browerville, Sauk Rapids-Rice, Park Rapids, Kimball, Becker, Lake Superior Schools (Two Harbors/Silver Bay), Red Lake County Central, Floodwood, Kerkhoven-Murdoch-Sunburg, Barnum, Rockford, Worthington, Henning, Perham-Dent
North Dakota: Grafton, Minto, Park River, North Border, Carrington, Thompson, Midkota
South Dakota: Groton, Lead-Deadwood, Madison Central, Spearfish
Wisconsin: Northwestern (Maple, WI), Washburn, Ashland

Other projects:

- Rock Ridge (Virginia-Eveleth/Gilbert) elementary school attendance boundary analysis
- Itasca Area Schools Collaborative
- Red Lake College Enrollment Assessment
- Iron Range Higher Education Committee
- Northeast Higher Education District (Minnesota State College and University system)
- St. Louis County Schools long-range facilities